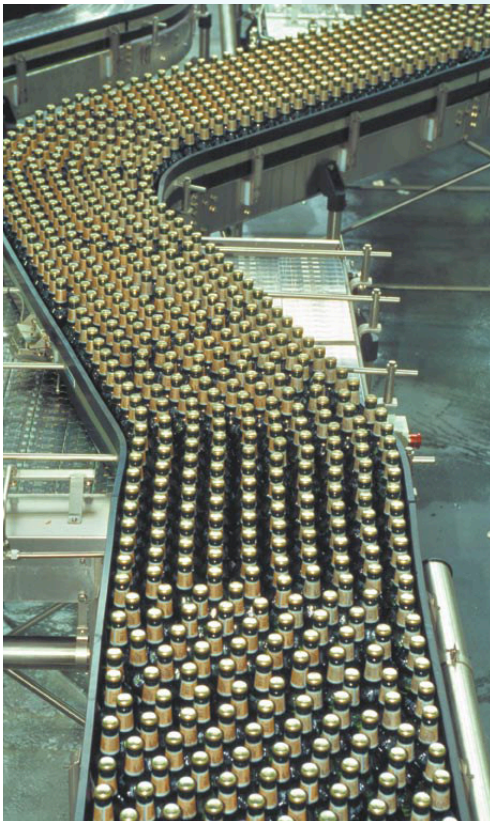


Solutions

Two of Australia's leading soft drink makers, Coca-Cola Amatil and Cadbury Schweppes, have switched to waterless conveyer lubricants in their bottling plants to reduce water consumption and improve conveyer efficiency.

Dry lubes smooth the way to water saving



Traditionally, bottling lines have used water as a lubricant to prevent friction on conveyer lines and reduce static between plastic bottles, with water sprayed directly onto the lines through jets.

The use of water-based lubricants involves high water consumption resulting in high chemical treatment costs. It can also create a damp, slippery and potentially unsafe workplace. Additional water can be wasted if spray valves don't direct water to the right spots, have an excessive flow rate, or don't stop when the line is idle.

Good maintenance can reduce the water consumption of a water-based lubrication system by up to 45 per cent. However, to achieve further savings, alternatives to water based systems must be considered – and the use of dry lubricants is becoming increasingly popular – with both Cadbury Schweppes and Coca-Cola Amatil making the switch.

There are several different dry lubrication products available commercially. Teflon is a popular choice for dry lubricants, because it has extremely low friction, and generally does not react with other materials. Other popular dry lubricants or hybrid lubricants use a silicone formulation of 90 per cent silicone and 10 per cent water.

Cadbury Schweppes dries its lines

Cadbury Schweppes manufactures drink brands including Pepsi Cola, Schweppes Lemonade and Solo. Cadbury Schweppes ran dry lubricant trials on its Sydney conveyer lines between May 2005 and October 2005, and commissioned five lines.

Cadbury Schweppes is now saving 16 ML of water a year in its Sydney plant. Overall, Cadbury Schweppes has rolled out the process to 12 lines nationally, and is saving approximately 42 ML across factories in NSW, Victoria, South Australia and Western Australia.

Management at Cadbury Schweppes has also noted the advantages of a dryer working environment, and improved employee awareness of water conservation.



Top: Dry lubricants may be used to convey glass bottles, but nylon conveyers must be used. Transporting glass bottles on high speed stainless steel conveyers with dry lubricants is rarely successful.

Above: Cadbury Schweppes is saving 42 ML of water a year after introducing dry lubrication to its bottling lines in four states.

Opposite: Coca-Cola Amatil expects water savings of 75 ML a year when all its production lines are converted to dry lubrication.



Coke's dry lube success

Coca-Cola Amatil is Australia's largest soft drinks bottler and makes soft drinks including Coca-Cola, Diet Coke, and Fanta. The company trialled the use of a new teflon-based lubricant at its Northmead and Smithfield plants in Sydney, and its Moorabbin plant in Melbourne during 2005.

After successful trials, Coca-Cola Amatil converted three lines in Sydney between August 2005 and April 2006, achieving water savings of 9.8 megalitres (ML). The process is now in place on nine Coca-Cola Amatil lines nationally and savings of about 20 ML have been achieved over the 2005–06 financial year. When all lines in Australia are converted, Coca-Cola Amatil expects savings of about 75 ML a year.

In addition to water savings, the adoption of teflon lubrication has also reduced the amount of wastewater being discharged and reduced the need for chemical treatment. Coca-Cola Amatil also believes that the process has led to other improvements, including a reduction in fallen bottles on the production line, a reduction in slip hazards for staff because floors and equipment remain dry, and less corrosion of metal parts.

Using your dry lube

Most dry lubricants are applied through drip nozzles. Brush applicators were used initially, but have fallen out of favour because of the chance of microbial contamination of the brushes.

The amount of lubricant required will generally depend on the age of the conveyer system, and the type of containers. Good application systems should allow you to alter the amount of lubricant applied, optimising conveyer speeds and lubricant use. As many dry lubricants have very low friction, it is important not to over apply lubricants, as this could lead to slippage on the conveyer system.

The type of alternative lubrication and its method of application will depend on the type of product being bottled and the type and age of your conveyer system.

Dry lubricants work well for PET and tetra bottling on stainless steel and poly slat conveyers. However, dry lubricants generally aren't successful when glass bottles are being transported on high-speed stainless steel conveyer systems. Nylon conveyers should be able to handle glass bottles with dry lubricants.

The type and amount of dry lubricant you choose will vary with each manufacturer and the product bottled. It is important to talk to your lubricant supplier and run controlled tests prior to full implementation, to ensure that introducing new lubricant systems can maximise your water savings and maximise the efficiency of bottling lines.